

AGRICULTURAL CONDITIONS IN EASTERN CAROLINA.

Notes on the Soil Survey from Raleigh to Newbern, N. C.

The soil survey area mapped by our party extends from Raleigh to New Bern, along the line of the Southern and the Atlantic and North Carolina Railways, a distance of 105 miles, about 9 miles wide, and contains approximately 1,000 square miles, or 640,000 acres.

From Raleigh eastward to New Bern there is a gradual increase in the size of the farms. In the hilly regions east of Raleigh the farms contain about 110 acres; in the middle portion of the area surveyed the farms contain on an average about 140 acres, while in the level country about New Bern there are many large plantations of more than 1,000 acres, and the average farm contains 225 acres.

The improvements on these farms vary greatly in the different sections of the area. Usually they possess a dwelling house, barns for stable purposes, and wagon sheds, and in the tobacco area curing sheds are always found. The tenant houses for the colored laborers form a part of the farm equipment, especially on the larger plantations. Fences are maintained at a minimum expense, for the stock laws in most of the counties are such that protection against stray cattle and other stock is unnecessary.

There are several systems of cultivating the farms. Where the farms are small they are usually farmed by their owners, but where they are larger the owners may manage the entire farm and employ labor necessary to carry on the operation. Again, portions of the farm may be rented for a cash rent or on the share system. A favorite system is to rent portions of a large farm to a tenant on shares provided he buys his provisions, etc., from the plantation owner, who conducts a large general store. In the entire area the labor is both white and colored, and frequently both kinds are employed on the larger farms. For such crops as cotton and tobacco, the negro labor is as capable as white labor.

As the area surveyed follows so closely the railroad throughout the entire distance, transportation by rail is very good, and some of the industries, as, for example, the trucking industry, have been made possible by the advantage which comes from rapid transportation. In the eastern part of the area water transportation is available and has been utilized to a considerable extent in developing the resources of the country. The wagon roads of the area are not good. While some of the roads have been constructed at considerable expense and can be easily traveled, by far the larger number of roads have received no attention whatever, and are consequently in poor condition for either light or heavy hauling.

The principal crops are corn, cotton, tobacco, and truck. Corn has

always been one of the staple crops of the entire area and occupies a prominent place in the various crop rotations used in the different sections of the area. Cotton is also one of the important crops grown, and the yield per acre shows the beneficial results of improved methods of culture and of the attention given to fertilizers. The effort is being made to manufacture the crop where it is grown, and in this way an important industry is being developed which has a far-reaching influence on the economic development of the State.

Since the introduction of bright tobacco in the eastern part of the State it has achieved remarkable success, and large districts of the area surveyed produce a fine type of lemon-yellow tobacco. In addition to the crops grown the development of the truck industry in the eastern portion of the area has made valuable large tracts of land which were formerly not desirable for agricultural purposes. Nearly all classes of early truck and early fruits are grown, and handsome profits are realized by successful farmers. The largest shipments of truck are from Goldsboro, Newbern, Kinston, and LaGrange.—William G. Smith, in Official Report on the Soil Survey, by United States Department of Agriculture.

Suggestions to Horse Breeders.

Editor of The Progressive Farmer:

Prof. W. J. Kennedy, of the Chair of Animal Husbandry Iowa Agricultural College, contributes an article to the forthcoming agricultural Year Book, entitled "Selecting and Judging Horses for Market and Breeding Purposes," which seems to contain sound practical advice to every farmer who raises horses. In no other line, he says has there been such a lack of systematic study among all farmers as in horse breeding. They have practiced haphazard methods for many years, rearing horses without any regard to the demands of the consumer. During the period of 1893 to 1896 nearly every farmer owned unsalable horses—horses that while sound, useful animals for certain purposes, belonged to no class and could not be sold at even low figures. Farmers came to the conclusion that the horse market was gone forever and employed various drastic methods to get rid of their surplus animals. In a few years these same men were in the horse market as buyers and now a reaction has taken place and the farmers are once more breeding horses, but the majority of them in the same old way. They should profit by past mistakes and aim to produce horses for a definite purpose. There never was a time, even when the depression was at its worst, when a good individual of any of the recognized classes would not command a fair price. The greatest danger in the business is that at the present time the market is strong and the horse of no particular breeding or type is bringing a fair price. Such horses should not be bred because

even when breeding for definite purposes there will always be a large number of "misfits."

A man, to be a successful breeder, should be familiar with the horse markets and he should have a clear and well-defined ideal of the type of horse he is going to breed, and then set out to produce the same, yet without expecting too much. He will be a fortunate man if 50 per cent approach his ideal.

Under existing conditions, Professor Kennedy says in the Year Book, there are at least four distinct classes of horses that farmers can profitably raise. The first and most important is the heavy draft horse, next the carriage or coach horse, then the roadster horse and the saddle horse.

Professor Kennedy's article goes into considerable detail as to the breeding and raising of the above-mentioned four classes of horses, indicating by diagram, as well as description the point to be observed by the breeder. The summary of his conclusions is:

That the heavy draft horse is probably the most profitable for the farmer to breed. He requires less education than the coach or saddle horse, and is always in good demand.

Next in importance to the draft horse for the farmer breeder is the carriage or coach horse, and men who are naturally adapted to educating or training horses can produce nothing so profitable as carriage or coach horses. Most farmers, have been following wrong methods in trying to breed such horses.

The roadster horse or gentleman's driving horse is in good demand at the present time. Special attention should be given to size and bone, as they are very essential in the makeup of the high-class roadster.

The market for a good sized saddle horse is and always has been an excellent one. Most saddle horses are under-sized. The heavy-weight saddle horse, capable of carrying 220 pounds and over is a rare animal and always commands a very high price. There is always a good demand for the lighter-weight saddle horse, but he does not command such a good price. The breeding of the saddle horse is a matter of care and intelligence. He must have good manners, with a mouth that responds readily to the hand of his rider, and must also possess graceful and elastic action in all paces.

GUY E. MITCHELL.

Washington, D. C.

The Commonwealth has pleaded many times for the poor, speechless horse or ox that is oftentimes worked too hard on too scant feed and then left to stand sometimes for hours in the hot, blistering sun. At this season of the year the heat of the sun is peculiarly exhausting both to man and beast. It is inexcusable cruelty to leave stock standing in the sun any length of time. One who is careful for the comfort of his beasts can almost always find a shade or a stall for them.

There is a good law on the statute books against cruelty to animals and it ought to be enforced.—Scotland Neck Commonwealth.

EASY SCIENCE STUDIES FOR FARMERS.

XVIII.—Availability.

Soil is the most important factor in the tilling business. Soil is the raw material, worth a nominal price per ton, from which the son of the soil manufactures a finished product worth several dollars a ton. So now that we have led nicely up to the subject, let us consider a few interesting facts with relation to this raw material.

Nine inches' depth of arable loam will weigh, when perfectly dry, about 3,000,000 pounds to the acre. At \$50 per acre this top layer of soil is worth a trifle over three cents per ton. That seems to be a very reasonable price when one considers the cost of commercial fertilizers, or even the cost of hauling and scattering barnyard manure. But a great part of this weight is sand and earthy matter serving chiefly as a support and as a sponge to hold water.

A good arable loam may contain .15 per cent of nitrogen, .15 per cent of phosphoric acid, and .2 per cent of potash. Therefore there may be 4,500 pounds each of nitrogen and phosphoric acid and 6,000 pounds of potash on an acre of good loam. If you bought this plant food in the market in the shape of bone meal, super phosphates, dried blood, cotton seed meal, etc., you would pay (according to Professor Sanborn's letter next week) 18 cents a pound for the nitrogen and 4½ cents a pound each for the other ingredients. That gives you \$810 worth of nitrogen, \$202.50 worth of phosphoric acid and \$270 worth of potash, or \$1,282.50 worth of plant food on an acre of good land.

It looks like a pretty comfortable bank account. But, hold! This fund is not all negotiable. There is that word "available" surrounding most of these chemical stores like a barb wire fence that is horse high, bull strong and rabbit tight. A large part of the elements of plant food contained in soils is present in such a condition that plants are unable to make use of it. An acre of soil may contain many thousand pounds of phosphoric acid or of nitrogen, and yet be in a poor condition; while a dressing supplying 50 pounds of readily available phosphoric acid or nitrogen in the form of superphosphate or sodium nitrate, may greatly increase its productiveness.

The "available condition" of the plant food depends much on the character of the soil. A much smaller proportion of plant food will render a sand fertile than would be required in the case of a clay. This is partly from the far greater development of the roots in a sandy soil, and partly from the different condition in which the mineral food is held. The presence of lime in a soil (of which there may be naturally as much as five to ten tons), especially when associated with humus much increases the availability both of potash and phosphoric acid, so that smaller quantities of these suffice when lime is present.